IN THE CLAIMS

1-12. (canceled)

13. (currently amended) A method for identifying a patient having breast cancer or breast precancer, said method comprising:

placing a ductal access tool comprising a lumen in a breast duct of a patient;

infusing a fluid into the duct through the lumen;

retrieving a ductal fluid sample from the accessed duct through the lumen;

~~providing a ductal fluid sample from at least one duct of a breast of the patient;~~ and

examining the ductal fluid sample to determine the presence of a marker comprising an expression product of a gene encoding a nuclear matrix protein.

14. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the expression product is ~~comprises~~ a nucleic acid or a polypeptide.

15. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the expression product is ~~comprises~~ RNA.

16. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the expression product is ~~comprises~~ a polypeptide ~~protein or a part of a protein~~.

17. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the nuclear matrix protein is selected from the group consisting of lamin A, lamin B, lamin C, a peripheral matrix protein, nuclear mitotic spindle apparatus protein (NuMA), topoisomerase II, and an internal nuclear matrix protein.

18. (currently amended) ~~A method as in~~ The method of claim 16 ~~13,~~ wherein the ~~expression product is a polypeptide and~~ step of examining comprises contacting the polypeptide ~~marker~~ with an antibody that specifically binds to ~~a portion or~~ the polypeptide.

19. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the expression product is a nucleic acid ~~and examining comprises amplifying the nucleic acid~~.

20. (currently amended) ~~A method as in~~ The method of claim 19~~, wherein detecting the presence of the nucleic acid comprises~~ further comprising the step of amplifying the nucleic acid.

21-24. (canceled)

25. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein the fluid collected is from a single duct.

26. (currently amended) ~~A method as in~~ The method of claim 13~~,~~ wherein ductal fluid samples are ~~the fluid is~~ collected from a plurality of ducts.

27. (canceled)

28. (canceled)

29. (new) The method of claim 13 wherein the single lumen has an inner diameter large enough to retrieve clusters of greater than 10 cells.

30. (new) A method for identifying a patient having breast cancer or breast precancer, said method comprising:

placing a ductal access tool comprising a lumen in a breast duct of a patient;

infusing a fluid into the duct through the lumen;

retrieving a ductal fluid sample from the accessed duct through the lumen; and

examining the ductal fluid sample to determine the presence of a marker selected from the group consisting of fibrinogen degradation peptide, a cathepsin, fas, fas ligand, a tissue inhibitor of matrix metalloproteinase (TIMP), a chemokine, a collagenase, a metalloproteinase, a disrupted basement membrane epitope, a cytokeratin a steroid receptor, a growth factor receptor for a member of the fibroblast growth factor (FGF) family, placental growth factor (PLGF), hepatocyte growth factor (HGF), tumor necrosis factor (TNF), transforming growth factor (TGF) alpha, TGF beta, a growth factor, angiopoietin, a heat shock protein (HSP), an ErbB type 1 tyrosine kinase receptor, a ligand for an Erb type 1 tyrosine kinase receptor, an integrin, a selectin, a cadherin, a cancer antigen, a thrombin receptor activating peptide, urokinase, urokinase-type plasminogen activator (UPA), plasmin antiplasmin, UPA receptor (UPAR), fibrinogen,

plasmin activator inhibitor-1 (PAI-1), PAI-2, telomerase, an antibody to tumor associated antigen-72 (TAG-72), carcinoembryonic antigen (CEA), prostate specific antigen (PSA), gross cystic disease fluid protein – 15 (GCDFP-15), lactose dehydrogenase (LDH), S1 protein, alkaline phosphatase, myosin, a sialyl Tn (STn) glycopeptide, Tn glycopeptide, alanine aminopeptidase, alpha 6 integrin, alpha-lactalbumin, AN43 antigen (BB1), annexin 1, anti-Her 2, anti-p53, Bad, BAG-1, Bak, Bax, BCA225, Bcl-x, a beta 1-6 branched oligosaccharide, beta-2 microglobulin (BMG), Bfl-1, bone sialoprotein (BSP), C/EBP beta-LIP, Ca 1 antigen, CA27.29, CA M26, CA M29, CA125, CA15.3, CA195, CA19-9, CA50, CA549, cadherin-11, calcitonin receptor (CTR), CD105, CD24, CD34, CD44, CEA, c-met, c-myc, Cox-1, Cox-2, CPP32, cyclic nucleotide phosphodiesterase, cyclin E, DNA topoisomerase II-alpha, DNA topoisomerase II-beta, EGF, EGFR, E-selectin, fast homoarginine-sensitive alkaline phosphatase (FHAP), fatty acid synthase, ferritin, GCDFP-15/BRST-2, h-mts1 (S100A4), ID1, ID3, interlukin-1 beta, laminin, laminin receptor (MluC5), leucine aminopeptidase (LAP), lipid-bound sialic acid (LSA), MAGE-1, MAGE-2, MAGE-3, Man6-P glycoproteins, MCA, Mc1-1, metallothionein (MT), MKP-1, MSA, Nm23, ornithine decarboxylase (ODC), osteopontin (OPN), P114, P120, p125FAK, p330d/CENP-F, PAI-2, pepsinogen C, placental alkaline phosphatase (PLAP), platelet factor 4, protein kinase C (PKC), PSA, pyrimidine nucleoside phosphorylase, ras p21, retinoid X receptor alpha, ribosomal S2 protein, sialyltransferase, SM1, SM2, NM-MyHC, surfactant protein A, surfactant protein B, TAG-12, TFF-1, TFF-3, thrombin, thrombomodulin, thymidine phosphorylase (TP), thymosin beta 15, a tissue cytosol ferritin, tissue polypeptide antigen (TPA), TPS, uPAI, claudin-7, zinc-alpha-2-glycoprotein, apolipoprotein B, B94, EST (R08988), thrombospondin (THBS1), FGF-1,

NGAL-Lipocalin 2, EST (N77731), BS247, AIB-1, Erb-B2, EGFR, 14-3-3, SPR1, cyclin D2, GST-pi, estrogen, retinoic acid receptor-beta 2, BRMS1, a matrix metalloproease (MMP), placental isoferrintin (p43), nuclear matrix protein (NMP22), NM-200.4 specific antigen, endoglin (CD105), ErbB-2, ErbB-3, breast cancer-specific gene (BCSG), colony stimulating factor-1 (CSF-1), colony stimulating factor-1 receptor (fms), MCSF, annexin I, RANTES, 44-3A6 specific antigen, A-80 specific antigen, H23 specific antigen, 83 D4 specific antigen, SP-2 specific antigen, 323/A3 specific antigen, MBE6 specific antigen, p53, breast cancer antigen 225 (BCA225), B-cell CLL/lymphoma 2 (Bcl-2), Bc12-like 1 (Bcl-x), Bc12 related protein A1 (Bfl-1), bone sialoprotein (BSP), CCAAT/enhancer-binding protein liver-enriched inhibitory protein (C/EBPbeta-LIP), carcinoma antigen 1 (Ca 1), calcitonin receptor (CTR), E-selectin, fast homoarginine-sensitive alkaline phosphatase (FHAP), fatty acid synthase, ferritin, gross cystic disease fluid protein (GCDFP-15/BRST-2), metastasis-associated h-mts1 (S100A4), inhibitor of differentiation-1 (ID1), inhibitor of differentiation-3 (ID3), interleukin-1 beta, laminin, laminin receptor (MluC5), leucine aminopeptidase (LAP), lipid-bound sialic acid (LSA), melanoma antigen-1 (MAGE-1), melanoma antigen-2 (MAGE-2), melanoma antigen-3 (MAGE-3), Man6-P glycoproteins, mucin-like carcinoma associated antigen (MCA), myeloid cell leukemia-1 (Mc1-1), metallothionein (MT), mitogen-activated protein kinase phosphastase-1 (MKP-1), mammary serum antigen (MSA), a breast cancer mucin Nm23 nucleoside diphosphate kinase, ornithine decarboxylase (ODC), osteopontin (OPN), P114 (MAR binding protein), P120 (a nucleolar proliferation antigen), focal adhesion kinase p125FAK, nuclear autoantigen p330d/CENP-F, pepsinogen C, placental alkaline phosphatase (PLAP), platelet factor 4, pyrimidine nucleoside phosphorylase, ras

p21, reduced glutathione (GSH), ribosomal S2 protein, sialyltransferase, surfactant protein A, surfactant protein B, tumor associated antigen-12 (TAG-12), trefoil gene TFF1, trefoil gene TFF3/ITF/hP1.B, thrombin, thrombomodulin, thymidine phosphorylase (TP), thymosin beta 15, a tissue cytosol ferritin, tissue polypeptide antigen (TPA), tissue polypeptide specific antigen (TPS), a vascular endothelial growth factor receptor (VEGFR), claudin 1, claudin 2, claudin 3, zinc-alpha-2-glycoprotein, gross cystic disease fluid protein-15kD (GCDFP-15), apoliprotein, CD36-binding peptide, thrombospondin-1, fibroblast growth factor, Neu-related, lipocalin/neutrophil gelatinase-associated lipocalin, amplified in breast cancer-1 (AIB-1), transcriptional intermediary factor 1 (TIF-1), TIF-2, glutathione S-transferase pi (GST-pi), SPR-1, HME-1 (25kd), 14-3-3 sigma protein, stratifin, cyclin D1, vascular permeability factor (VPF), flt-1, Fas, Apo-1, CD95, Fas ligand (fasL), macrophage inflammatory protein 1 alpha (MIP alpha), MIP 2 beta, LH39, Integrin beta 1, E-selectin, catenin E, catenin alpha, catenin beta, catenin gamma, thrombin receptor, a serine protease inhibitor, alpha-1-antichymotrypsin, alpha-1-antitrypsin, alpha2-macroglobulin, antithrombin III, C1 inhibitor, alpha2-antiplasmin, cytokeratin, lipid bound sialic acid (LSA), alkaline DNAse (ADA), telomerase, an antibody specific for a myosin smooth muscle heavy chain, an antibody specific for myosin non-muscle, 108kD nuclear polypeptide, 53kD nuclear polypeptide, 48kD nuclear polypeptide, 36kD cytoplasmic polypeptide, c-fms, a vasopressin receptor, an oxytocin receptor, vasopressin-associated human glycopeptide (VAG), oxytocin (OT), oxytocin associated human neurophysin (OT-HNP), alanine aminopeptidase (AAP), tissue polypeptide antigen (TPA or TPS), an antigen recognized by M3 antibody, alpha-lactalbumin, C/EBP, Bone sialoprotein (BSP), CA-15-3, P-glycoprotein, ICBP90 (89,758

kD), aromatase (CYP19), prostaglandin endoperoxide synthase, PGE2, hormone induced gene-1 (HI-1), cCaspase-3, MZ2-E antigen, MZ2-D antigen, SART-1, P16 (INK4, MTS-1), inhibitor of cyclin D-CDK4 complex, breast cancer specific gene-1 (BCSG-1) gamma-synuclein (SNCG) SNC-gamma, connexin 26, connexin 43, fibronectin, relaxin, basic fibroblast growth factor, human milk fat globulin, (HMFG), c-erbB-2, c-erbB-3, oncofetal ferritin bearing lymphocytes (FBL), oncofetal ferritin placental isoferritin (p43) (PLF), type IV collagen, Ki-67, PCNA, 72kD type IV collagenase gelatinase, Nm23 nucleoside diphosphate kinase, MM 1-80 polymorphic epithelial mucin (PEM), H23 breast tumor associated antigen gene 17.5, PS2, Tn-associated antigen, N-acetyl-lactosamine, lectin, lectin receptor, T-antigen MBE6 antibody, c-met tyrosine kinase receptor, hepatocyte growth factor (HGF), angiopoietin-1, Nm23, Ki67, P21, P27, TKH1, TKH2, sialosyl-Tn, lactate dehydrogenase (LDH), myosin light chain kinase, an estrogen receptor, a progesterone receptor, and an androgen receptor.

31. (new) The method of claim 31 wherein the marker is a cathepsin and the cathepsin is selected from the group consisting of cathepsin D, cathepsin B, and cathepsin L.

32. (new) The method of claim 31 wherein the marker is a TIMP and the TIMP is TIMP-1.

33. (new) The method of claim 31 wherein the marker is a chemokine and the chemokine is a C-C type or a C-X-C type chemokine.

34. (new) The method of claim 31 wherein the marker is a cytokeratin and the cytokeratin is selected from the group consisting of keratin 14, B1, KA1, KA4, and 312C8-1.

35. (new) The method of claim 31 wherein the marker is a member of the FGF family and the member is selected from the group consisting of FGF1-18, IGF-II, platelet-derived growth factor (PDGF), keratinocyte growth factor (KGF), and epithelial growth factor (EGF).

36. (new) The method of claim 31 wherein the marker is a heat shock protein and the heat shock protein is selected from the group consisting of HSP27, HSP90 alpha, and HSP90 beta.

37. (new) The method of claim 31 wherein the marker is an ErbB type 1 tyrosine kinase receptor and the ErbB type 1 tyrosine kinase receptor is Her2.

38. (new) The method of claim 31 wherein the marker is a cadherin and the cadherin is selected from the group consisting of alpha and beta 3 integrin.

39. (new) The method of claim 31 wherein the marker is a cancer antigen and the cancer antigen is selected from the group consisting of Ki-67, Ki-S1, p53, nm23, bcl-2, p21 ras, cyclins, and pS2.

40. (new) The method of claim 31 wherein the marker is a sialyl Tn (STn) glycopeptide and the glycopeptide is TAG-72.